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The Tupelo Tree.

THE forests of eastern America contain few trees more interesting to the botanist or of greater ornamental value than the Tupelo, Pepperidge, Sour Gum or Water Gum, as one of the American representatives of the small genus Nyssa is popularly called in different parts of the country. This genus was so named by Linnæus for a water nymph, because the species known to him, inhabitants of our far southern states, grow usually in shallow ponds or deep swamps overflowed for a considerable part of each year. Its nearest American relatives are the Cornels, from which Nyssa differs principally in its five instead of four-parted flowers, which are rarely perfect, but produce their male and female organs separately, while the flowers of the Cornels are perfect, and, in its alternate leaves, the leaves of our Cornels being opposite except in the case of a single species.

The distribution of the genus is exceptional and interesting. Three species, or four, according to the opinion of some excellent observers, inhabit different parts of eastern North America from Maine to Texas. One species, a tree of some size, occurs at considerable elevations on the Sikkim Himalaya, and one or two little known species are found on the mountains of Java. The genus has no representative, strange to say, in the flora of China or Japan, where so many of the types of eastern America occur; and paleontologists have not yet brought to light any indication that the ancestors of existing species inhabited a larger part of the earth's surface than these species do at present.

This is not the place, and it is not our intention, to discuss at this time the limits of the different American species, which have puzzled botanists ever since they have known them, the confusion beginning with Linnæus himself, who included two very distinct species under his original description. It is our purpose merely to call attention to one of the species still little known or appreciated by planters as an ornamental tree. This is the Nyssa, which is generally distributed through all the eastern portions of the United States south of the southern part of the state of Maine and central Michigan. *Nyssa aquatica* appears to be the correct botanical name for this tree, although it is only in the extreme south that it grows in water. Near the coast of the northern states it always grows by the borders of swamps in low, moist ground; and in the interior, especially on the lower slopes of the high Alleghany Mountains, where it attains its greatest size, it is found at considerable distances from the water-courses associated with the Oaks, Magnolias, Hemlocks, Hickories and Ashes which form the principal part of the forest-growth. Here the Tupelo grows sometimes to a height of considerably more than a hundred feet, with a tall, stout trunk three or four feet in diameter, and short slender branches, contracted in their development by its neighbors in the forest. Near the coast it is always a much smaller tree, especially in the southern states, and it is rare to find it more than fifty feet high except in the mountain forests or in those of the lower Ohio valley—a region of exceptional and extraordinary tree-growth.

The habit of this tree as we see it near the coast is very different from that which it assumes when growing in the dense forest, for, as it grows near the coast in low, wet land, which produces generally few trees, the individuals have sufficient room for the development of their branches, which are long and nearly horizontal, producing a flat, often umbrella-shaped, top. This is the familiar form in which the Tupelo is seen in the neighborhood of this city, either along the shores of Long Island Sound, where it abounds, or the New Jersey coast.

The leaves vary much in size and somewhat in outline on trees in different parts of the country, the largest and broadest being produced on the Alleghany Mountains, and the smallest in the Florida Pine-barrens. The flowers in the different forms vary, however, very little. The staminate flowers are produced in dense clusters, while the female flowers are borne two to fourteen together at the summit of an elongated peduncle. The blue-black fruit, of which rarely more than two are developed from a cluster of flowers, varies somewhat in shape, and very considerably in size, in different parts of the country, as do the seeds, which have been depended on to divide the species. But the botanist, with a large series of specimens gathered from trees growing under the various climatic conditions to which this species is subjected, finds it a difficult task to distinguish characters which can be depended on to establish varieties even which do not pass imperceptibly one into another.

The Tupelo was introduced into England in 1808 by John Lyon, an English plant-collector who traveled widely in North America early in the century. It was doubtless sent earlier to France, as it is hardly possible that Michaux could have failed to introduce such a distinct and beautiful tree into the plantations of his native land. Whether this is true or not it is certain that no American tree is now more rarely seen in Europe, and a really fine specimen outside of America is not easily recalled. This is due, perhaps, to the difficulty which is always experienced in transplanting this tree after it has been allowed to remain undisturbed for any length of time or after it has attained to any considerable size. The roots are remarkably stout and long, with few rootlets, so that the trees are never easy to move unless they have been grown in the nursery and specially prepared for transplanting. It is easily raised from seed, however, the seedlings are easily transplanted, and if they are set while still young where the trees are to grow permanently, no difficulty will be experienced with them. Even large plants dug up in the swamps can be successfully moved if extraordinary care is taken in the operation, but for the ordinary cultivator it is best to depend on small, nursery-grown plants when they can be obtained.

The Tupelo should be more often seen in ornamental plantations than it is at present. The habit of this tree when allowed sufficient room in which to grow is striking and interesting and quite unlike that assumed by any other of our hardy trees. The foliage is abundant and lustrous, and in the autumn it assumes a brilliancy and splendor of coloring

unrivaled by that of our other trees. It is one of those trees which always attract attention—in the winter by its peculiar habit, in summer by the beauty of its foliage and in autumn by its coloring.

The wood of this tree is nearly white and very light, but with such an intricately contorted grain that it can be split only with the greatest difficulty. It is valuable, therefore, and now considerably used for the hubs of light wheels and for rollers in glass factories, for ox-yokes and similar purposes.

The value of the Tupelo as an ornamental tree is shown in our illustration on page 491 representing a group of these trees growing naturally near a small pond in the town of West Medford, Massachusetts, and made from one of the excellent tree portraits for which we are indebted to Mr. Henry Brooks.

Nyssa aquatica is a small-fruited species, the stone marked by broad, rounded ridges; the fruit of the two other American species is very much larger, the stones being marked with prominent acute or winged margins. The first of these two species is the *Nyssa uniflora* of botanists, so called because the fertile flowers are solitary. This is a large tree, usually known as the Cotton Gum or Big Tupelo, a hundred feet or more high, and an inhabitant of deep river-swamps, where it grows in immense quantities, generally with the Sweet Gum, from southern Virginia and southern Illinois and Indiana to Florida and Texas. It has ample, usually angular-dentate leaves and peduncled fruit half an inch long, known in the country where it grows as wild olives. It is one of the largest, handsomest and most abundant of the river-swamp trees of the southern states. According to Aiton, it was introduced into England as early as 1735 by the indefatigable Peter Collinson, who no doubt received it from his constant correspondent, John Bartram; it was probably soon lost from gardens, and it is extremely doubtful if it is now anywhere known in a living state outside its native swamps.

The other American species of the genus is a smaller tree than either of the others and much more restricted in its range. It is the so-called Ogeeche Lime, the *Nyssa Ogeche* of botanists, of the coast region of South Carolina and Georgia, and of a few isolated stations of northern and western Florida. It is a shrubby tree, with staminate flowers in large clusters, the fertile solitary and usually perfect. These are followed by olive-shaped scarlet fruit nearly an inch long, and very acid even when fully ripe. It is collected in considerable quantities, being much esteemed when preserved with sugar for its sub-acid flavor. It is known as wild limes or Ogeeche limes. It is doubtful if this tree, although known to Bartram, Marshall, Walter and the early American botanists, has ever been cultivated, although it might well be grown for its fruit in regions where the Orange flourishes.

During the discussion on landscape-gardening at the Boston Convention of Florists Mr. C. B. Whitnall, of Milwaukee, in the course of a well constructed argument to justify the use of a natural combination of simple elements in park planting as against the more highly ornate style, which also had advocates, quoted the following sentence from Mr. McMillan's now famous essay: "The lights and shadows of a painting are carefully studied, and whatever is appreciated in the copy is surely of greater value in the original." Mr. Whitnall went on to inquire if any one ever heard of a noted artist who spent time in copying ribbon lines or carpet patterns or any other of the formal garden designs which may be classified under the general head of decorative planting. Of course, every one must admit that the genuine artist would prefer some nook in the wild-wood or some other piece of unadorned nature as a subject; but, after all, this hardly proves that so-called decorative gardening is altogether to be rejected. It only demonstrates in another way the truth of what we have before stated, and what is no doubt the belief of Mr. Whitnall himself, that there are two distinct kinds of gardening. It does not follow that a piece of embroidery is not beautiful and useful in its proper function because an artist does not choose to put it on canvas, nor does it follow that a formal arrangement of plants may not have a legitimate use in certain places because it is not a fit subject for the brush. A true artist must express some sentiment. It is the inner meaning of his subject which he aims to interpret; but an arrangement of plants and flowers which is meant to be strictly ornamental addresses itself to the æsthetic faculty alone, and although it may give great delight on account of its perfect form and brilliant color its beauty is evanescent and superficial. Decorative planting of this sort is essentially transient. The arrangement of the beds may be altered a dozen times during the year, and they are sure to be changed with each season. It can have none of the associations which cluster around a work which has a permanent and continuous life beneath an ever-changing outward form. On the other hand, a natural landscape may have the beauty which an artist always wishes to reproduce, but it may have in addition a profounder meaning which excites the imagination and moves the feelings. All this means that landscape-gardening which deals with the permanent features of scenery, with the sky line and the distance and the shadowy mystery of wood borders, will always furnish subjects for the brush of the artist, while merely decorative gardening, which is concerned with the temporary adornment of smaller spaces, furnishes no such subject. In other words, it offers additional evidence that there are two kinds of garden art essentially distinct in purpose and in effect. There is no necessary conflict between the two styles of planting, but it is plain that each should be restricted to its legitimate field. Any attempt to combine the two by unskilled hands is likely to produce an incongruity in which the best effect of each will be more than neutralized by the other.

Shrubs which Endure Drought.

Barberries.—Some of the Asiatic Barberries have stood the heat and drought in a surprising way. Of these *B. Amurensis* stands well at the head for rapidity of growth, health of foliage and for the very heavy crop of handsome fruit. Several other species are also clean and healthy and loaded with varied and handsome fruit, under conditions which have favored the Cluster Cup Fungus and stunted growth on the common species from west Europe. Among the perfect ones I might name *B. esculenta, B. macrocaultea, B. carriacea, B. Fisheri, B. macrophylla, B. cratægina.* Our observations favor the belief that in our climate a number of so-called species are free from the Cluster Cup Fungus.

Russian Privet.—While classed as varieties of *Ligustrum vulgare*, the Privets from central Russia are quite unlike the common forms from west Europe, which are tender here. The leaves are broader, darker green, and in all respects more attractive; the plants are absolutely hardy, the flower-racemes are larger, pure white and fragrant, and the bunches of berries are larger, as are the individual berries. When in blossom the flowers were much worn by the ladies on the college grounds and prized for use as cut flowers in vases.

Tamarix Amurensis.—Here the common Tamarix is frozen down during our mildest winter, while that from the Amur is perfectly hardy. It is a dry climate plant, and will grow on the driest embankment in perfect health where nearly all other shrubs would perish. It is now (September 18th) in flower for the third time this season.

Climbing Honeysuckle.—What we have from Russia as *Lonicera Germanica* and *L. media* are models of health and vigor, with a grand show of brilliant scarlet berries in clusters at the points of growth. *L. confusa*, as we have it from north-east Germany, appears to be identical with *L. Halleana* from China, but it is a hardier plant and a more profuse bloomer.

Bush Honeysuckles.—*Lonicera splendens*, from seeds sent us by Professor Sargent, endures drought better, has better foliage and habit, and has a far more abundant crop of handsome fruit than the common *L. Tartarica, L. Zylosteum, L. Ruprectiana, L. Alberti*, and a half dozen named varieties from

France and Germany of the Splendens type are superior in every respect to the old varieties, and are now loaded with handsome fruit, shown amid clean, handsome foliage.

SALIX ROSMARINIFOLIA.—As an object lesson the attention of the junior class in horticulture was to-day directed to the plants of *Salix rosmarinifolia* from Ellwanger & Barry, and to the variety of the species from Voronesh, in central Russia. Since July there has not been a leaf on the west European variety, while at this late date the Russian form is clothed with perfect dark green, Fern-like foliage, and is an object of beauty. At any season and in any part of the country the Rosemary-leaved Willow from the East will be prized as a lawn shrub.

ROSES.—The varieties of *Rosa rugosa* from China, central Asia and Russia have not flagged a leaf or made less apparent growth than usual during the dry period.

SPIRÆAS.—Of the hardy varieties and species the most perfect and vigorous have been *S. triloba, S. Van Houttei, S. callosa alba* and *S. rubra* from Russia, *S. hypericifolia* and *S. Nobleana.*

CARAGANAS.—The most northern species, such as *C. arborescens*, have not endured the heat and drought without partial or complete loss of foliage. But some of the shrub varieties from the eastern steppes have stood remarkably well and flowered profusely. Of these *C. fruticosa, C. fruticosa variegata, C. macrophylla, C. mollis glabra* and *C. Redowsky* stand well at the head.

This list only includes a few trees and shrubs studied as object lessons by the junior class yesterday and to-day.

Iowa Agricultural College. *J. L. Budd.*

Judging the Quality of Apples.

THE *Maine Farmer* reports Pomologist Van Deman, of the United States Department of Agriculture, as saying in his address to the fruit-growers at the state fair in Lewiston: "I hear that you have taken to testing the Russian apples, which are very poor in quality"; and I wish to enter a protest against the hasty and inconsiderate way in which whole classes of fruit are condemned together. It cannot be justly said of the apples of any country that they are "very poor."

English apples are looked upon by Americans as inferior to their own varieties; and it is even claimed that the best English apples—the Ribston and Blenheim Pippins—are better grown on this side of the Atlantic. But the English, while admitting the brighter color of our apples, deny that the quality is better than in those produced by their own skillful fruit-growers.

When we speak of the quality of apples, the uses to which they are put must be considered. Downing says of the Talman Sweet: "In quality this fruit is scarcely second-rate, but it is a very popular and profitable sort." All over the country Ben Davis meets with criticism as to its quality, yet it is undoubtedly the leading commercial apple of the United States, and Downing classes it as "good to very good." Among Russian apples, Alexander, Red Astrachan and Oldenburgh are rated high upon the American Pomological Society's select list of 369 varieties. This high rating is not accorded to any of these five sorts for dessert quality; yet their value as commercial apples is indisputable, and they are as extensively planted (in some sections, at least) as any varieties on the list. This shows that high dessert quality is not and ought not to be the only standard by which apples are rated "good" or "poor."

Surely it is no more right to condemn the Russian apples as being "very poor" because some of the largest and best known among them belong to the class of culinary apples, than it would be to call all American varieties "very poor" because some of the leading and best known sorts, such as those named above, or others that might be added, are not dessert fruit. Much the larger part of the apples grown in this and other countries is devoted to culinary use. This seems to be forgotten by a large number of writers on fruit, but surely it ought not to be.

In regard to more recently introduced Russian apples it must be said, and borne in mind, that very few of them have had that wide and general testing, without which all pronounced opinion in regard to quality must be looked upon as a "snap judgment." A public official, above all, should beware of anything like the expression of a hasty and immature opinion on subjects of importance specially committed to his charge.

Of the 250 named varieties of Russian Apples that have been brought into this country within the last twenty years, I know no man who can say that he has ever had an opportunity of fairly testing as many as fifty. My own list covers but forty-two varieties, on which I have had more or less fruit. I am in my sixty-third year, and have been familiar with the apples of New England, the Ohio Valley, the St. Lawrence and Champlain Valleys, and of New York, from my youth; yet I feel no hesitation in saying that the Russian Apples in my orchard are not inferior in size, beauty, productiveness and vigor to the native varieties of any of these sections. They have, indeed, formed the finest and most attractive part of exhibits where they have competed with our native apples, or with the best known apples of western Europe that are grown in America.

As to the quality of these apples as a class, there are but two, possibly three, of mine that I would rate as very poor—or, to be more precise, as poor as the Ben Davis, when grown in New England. These are Green Crimean, the Spreading Pipka and the Yellow Arcadian. In the class of useful culinary Apples the Russian list is rich, and many of these are fully equal to any American or west European apples that I am acquainted with. We have no better market apples of this class for good flavor, easy cooking, salableness or productiveness than the best Russians, of which Red Astrachan, Oldenburgh and Alexander are well known types.

Of strictly dessert apples I have not yet found among the Russians many of the very highest type equal to Garden Royal, Hunt Russet, Grimes' Golden or Peck's Pleasant. But in a class just below these there is a considerable list, increasing rapidly now as the later importations come into bearing. I class as "very good" dessert apples the Yellow Transparent, Switzer, Longfield, Golden White, Autumn Streaked, Zolotoreff, Titus, Popoff and Prolific Sweeting, and these are not only very good, but they are also large, productive and attractive—some of them strikingly beautiful.

The strongest indictment against the Russian Apples, so far, has been the lack of long keepers among them. The earlier importations had hardly any of these, and we are but just beginning to find them among those now coming into bearing of the more recent ones. The fruit-growers of the "cold north" may rest assured that there are good keeping apples among them. This is certain, and also that they are of good to very good quality; but time is required to definitely place them. Though many of us who are trying them have found that the few first fruits of these varieties will keep as well at least as many in the accepted lists of American winter apples, we must have them in quantity, so that they can be handled not as single specimens, but by the barrel and car-load, before their exact status can be assigned them.

I feel sure that when the Russian apples are fairly judged they will make their way easily. No fruit can receive its proper place from a test of specimens sent by mail and cut on arrival, as I suppose has been the case with Mr. Van Deman. There is a time when any fruit is at its best, and eaten too soon or too late it is not possible to rightly know it. Some varieties have a short season as dessert fruit, and this is true not only of summer and fall apples, but of the longer keepers. Jewett's Fine Red, for instance, has a season of less than a month when it is really fine; and all fruit-growers can name other sorts of which the same may be said. There is also a vast difference in the quality of the same variety, according to how it is grown and handled. Some choice sorts never show their merits in the hands of careless persons. The Roxbury Russet is hardly "good" at any time during its long period when undersized or grown on unsuitable soil. But I have eaten these great Russets in May and June that were grown on the red iron soil of some of the Maine hills, when it was a full match for Mr. Van Deman's favorite, Grimes' Golden. It may thus be pronounced "very good" or "very poor," according to circumstances, and the same is true of many of the condemned Russians.

Newport, Vt. *T. H. Hoskins.*

Effect of Forest-Management on Orchards.

MR. FERNOW'S treatment of this subject from the point of view of an entomologist (see p. 462) suggests a paragraph on the relations between the wood-lot and the orchard from the botanical side of the question. The intimate relationship between the Cedar and the Apple-tree was illustrated during the present summer. There were complaints of a serious rust in a large Apple-orchard near Titusville, Mercer County, New Jersey, and in July I found the orchard, which occupies a hill-side, so conspicuously colored by the rust that it was the subject of remark by passengers upon the railroad trains. Not all the trees were equally attacked. The variety known as the Nero was the worst, while some other sorts at that time were nearly free from the rust. In several trees there were two or more kinds of fruit, and one might be rusted badly and the other nearly free.

The orchard is bordered upon two sides by woods containing many Red Cedars. It was evident that the "Neros" were the most rusted upon the side of the orchard next to the Cedar-trees. Two months later the leaves were nearly all off of the "Nero" trees, and while the trees had set full there was no fruit. The other sorts in the orchard had also suffered badly from the rust, but it was later in developing upon them.

Fig. 60. Oviparous Female.

The Cedar-trees in the wood-lot were loaded with the small, forming galls, which are commonly known as Cedar-apples. It looked as if a bushel of these excrescences might have been gathered from a single tree. These galls increase in size through the autumn, and in the spring, when the warm rains come, spores are developed and are carried away by the winds to the young Apple-leaves, where they germinate and produce the rust.

The spores produced upon the Apple-leaves find their way to the Cedar-leaves and there germinate and produce the excrescences above described. Here we have had upon a grand scale, for the orchard contains many hundreds of trees, an illustration of the intimate relationship in one particular of the forest and the orchard.

The mismanagement in this case consists in permitting the Cedar-trees to stand hard by the orchard, as living propagating-beds of a Fungus which in one of its forms may be of serious injury to the Apple-orchard.

The relation of the Black Knot of the wild Cherry-trees to the cultivated sorts is an instance similar to that of the Apple and Cedar, with the difference that the Fungus runs its whole course upon the same tree, and the wild Cherries simply furnish a constant supply of spores to infest any cultivated Cherry-tree that may be planted near by. The knots appear only when spores have come from some previously infested branch. It is a piece of folly to attempt the growing of Cherries in close proximity to wild plants that are full of knots. What has been said of the Cherries applies equally to the Plums, for these being closely related to the Cherries are attacked by the same knot-producing Fungus. If we are to have clean and healthy Cherry and Plum-trees in our orchards we must go through the wood-lot with the axe in search for all the wild sorts that bear the Black Knot.

The same close relationship exists between the wild Blackberry and Raspberry and those under culture. The rust of the one will spread to the other, and probably the same is true of the Anthracnose that has been so destructive to the cultivated Raspberry during the past year.

Rutgers College. *Byron D. Halsted.*

The White Pine Louse.

THIS insect was first described by Dr. Asa Fitch, in one of his reports on the insects of New York, as *Lachnus Strobi*. Colonies of the plant-lice are said to live upon the ends of the branches of White Pine, puncturing the twigs and extracting the sap, and causing the bark of infested trees to have a peculiar black appearance. Mention is also made of the

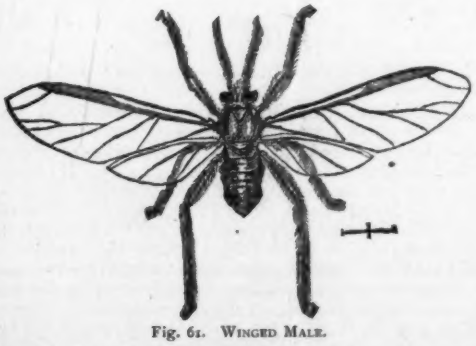


Fig. 61. Winged Male.

fact that numbers of ants occur in company with the lice, "traveling up and down the trees which they inhabit."

Very little has since been written concerning this insect. It appears to be a widely distributed species, and from its winter habit it is evident that it is liable to be introduced everywhere with Pine-trees from nurseries. In central Ohio it occasionally becomes sufficiently numerous to seriously injure ornamental Pines. One tree on the University campus here is now almost dead because of its attack.

Like most plant-lice, this species reproduces viviparously during the summer, but on the approach of cold weather the sexed individuals are produced. During October these are usually the only forms present, the oviparous females being congregated in great numbers upon the bark of the smaller branches, with their heads nearly always directed toward the trunk of the tree. When disturbed they move about rapidly, usually attempting to conceal themselves on the other side of the branch. At such times they also have a curious habit of waving their long hind-legs in the air, probably for the purpose of frightening away enemies.

The oviparous female is represented, magnified, at Fig. 60. It is about .1576 of an inch long, shining black, more or less tinged with brown, and ornamented with spots and stripes of white, as represented in the illustration. The winged male is also shown magnified at Fig. 61. The body is .1788 of an inch long, and the wings expand about .2758 of an inch. The insect is blackish, with a slight glaucous bloom, and a white longitudinal line along the middle of the back.

The eggs are deposited during October and November on the leaflets in rows, as represented in Fig. 62 (*a*). Each egg is .0788 of an inch long, elongato-oval, brownish when first laid, but becoming black in a short time.

Fig. 62.—*a*, Eggs on Leaf; *b*, Egg, magnified.

One of the best remedies for this pest is kerosene emulsion. There are also many natural enemies that keep it in check.

Ohio Experiment Station. *Clarence M. Weed.*

New or Little Known Plants.

Leucophyllum Texanum.

LEUCOPHYLLUM is a small Mexican genus representing a tribe in the great family of the Figworts or *Scrophulariaceæ*. Its near relatives botanically in our flora are the Mulleins, the Figworts, the Snapdragons, and other familiar plants of the field and garden. The Leucophyllums, of which three or four species are distinguished, are low, intricately branched shrubs, inhabitants of the desert, and distinguished by the silvery white wool which covers the lower surface of the leaves, and by the large, showy, axillary flowers. Two species reach the southern borders of Texas, *L. Texanum* and *L. minus*. The former, of which a figure appears on page 489, is a loose-growing shrub of straggling habit, attaining, under favorable conditions, a height of eight or ten feet, although it is rare to find it in Texas more than half that size. There is no shrub of the desert portions of the valley of the lower Rio Grande more generally distributed, and certainly there is not one of them which more delights the traveler in the early spring months, when the large, violet-purple flowers of this plant heighten the effect of its brilliant silvery foliage.

The leaves are half an inch to an inch long, obovate and almost sessile, pale gray on the lower surface like the shoots of the year and silvery white below. The flowers

are an inch or more across when expanded, with lanceolate-oblong calyx-lobes, a campanulate corolla slightly villose on the inner surface, with five rounded, nearly equal lobes, four included stamens and an emarginate stigma. The fruit is a two-valved capsule.

*Leucophyllum Texanum** was discovered many years ago by the Swiss botanist, Berlandier, a pupil and protégé of the elder De Candolle, who early emigrated to Matamoras and first explored the flora of the valley of the lower Rio Grande and of the Mexican Sierra Madre. In spite of its beauty it long escaped the attention of cultivators. It was taken in hand, however, a few years ago by Mr. P. J. Berckmans, of Augusta, Georgia, in whose garden it flowered during the past summer for the first time probably in cultivation; and it is from a specimen of one of the cultivated plants that Mr. Faxon has made the drawing which is reproduced in our illustration.

Fig. 63.—Leucophyllum Texanum.—See page 488.

Leucophyllum Texanum, although, according to Mr. Berckmans, it is difficult to propagate, is so ornamental in foliage and in flower that it will certainly become a popular garden plant wherever the climate is sufficiently dry and warm for its successful cultivation. A more interesting American plant has not flowered for the first time this year in any garden.

C. S. S.

*I.—Bentham in De Candolle's "Prod.," x., 344.—Gray, "Bot. Mex. Bound. Surv.," 115; "Syn. Fl. N. Am.," ii., 250.

Cultural Department.

Vineyard Notes.

ONE who has a vineyard is always sure of a surprise. After setting it down very positively that a certain variety has certain specific qualities, he is mortified to find that the next year reverses all his experience.

So it is that in 1890 I am quite confounded about several Grapes. Ulster and Vergennes are to be marked up, while Lindley goes down once more. Lady is where it was, the earliest and best; but so poor a bearer as to be useless. Hayes is up another notch, and behaves regularly so well that it seems to deserve the foremost place among delicious, prolific and handsome early white Grapes. Then Diamond, a little later, is first-rate. No disease touches it except anthracnose on the vine. The bunches and berries are both large and fine. It is handsome, prolific, healthy and an acquisition not easily over-praised. Niagara rotted last year, but this year is grand enough to make up. It is not so good a Grape as Diamond or as Hayes, but larger in bunch, and will outbear any Grape unless it be Worden. Empire State is a failure here in all ways. It is not of high quality nor always prolific, and shrivels on the stem after picking. Duchess is fine, but this year failed to fertilize well. Prentiss is good for nothing. Jessica is half seeds, a small bunch, a tepid flavor. Golden Gem is a spicy little affair, but very small. It grows about like Jessica, and a vine grower would get rich on one as soon as on the other. Purity is a really fine, very early Grape, ripening just after Lady. It is handsome and healthy, with a large berry and large bunch. Grein's No. 7 is worthless, a very small berry, without quality and half seeds. Grein's Golden is the handsomest of white Grapes, but has an odd acid flavor. Pocklington is a late white Grape that is admirable when fully ripe. It needs a favorable season. I should place it after Hayes, Diamond and Niagara. But when it ripens it will make with them a splendid quartette. Martha, when thinned in bunches, is a really fine white Grape for everybody. Eldorado is an ideal in quality and bears fairly well, but the bunches are imperfect. The general reports from it are of the same character. This completes the list of white Grapes of prominence except those grown mostly for wine.

Of red Grapes, Brighton fairly heads the list. It is a marvel in quality, a seedling of Iona, which it resembles, very early, ripening, however, all along through September. Enormously prolific, if grown with other Grapes; but if grown alone, it often fails to fertilize its flowers. Gaertner is another red of superior quality. It is noble in bunch, berry and quality, ripening with Hayes just after the earliest Grapes. Salem is better known, but is not quite so good as Gaertner. Lindley and Massasoit are much alike; they often fail to fertilize under the best conditions. In quality they are of the highest, but are too doubtful to be generally planted. Massasoit is the most subject to black rot of all Grapes in my collection. Ulster is a really good Grape, but was sent out so over-forced that the spindling vines damaged its reputation. Vergennes is doing better with me each year. Rogers' 30, a pale red, has been one of my favorites; but for two years it has failed to fertilize. Goethe, another Rogers of the pale red sort, is superb in quality if you can ripen it. Iona is perhaps best of all Grapes, but is seldom seen in the vineyard, because too tender. Goethe and Iona are best treated as pets on the south side of the house. Poughkeepsie Red is a solid bunched Delaware; it may be valuable in some localities. Agawam has come to me from reliable growers in two forms, and I think there really are two Agawams settled on the market. The earlier one is very fine, ripening with Gaertner; the late one is neither prolific nor good. Jefferson is food for the gods, but I cannot ripen it well in this section. Woodruff Red is a second-quality Grape, but perfectly healthy, with splendid foliage, a rampant grower, and the bunches are of compact, medium size. It is a good run-away Grape, where people do little in the way of culture and are not over nice about quality. Diana should be grown for a late red, ripening about with Woodruff. The bunch is very fine, and the vine both hardy and prolific. Walter completes my list of noticeable red Grapes, and is very fine. It looks like a large Delaware bunch, and bears well and is hardy.

Of the black Grapes, Worden, by all odds, heads the list. It is a Concord in all a Concord's good qualities, and leaves out the bad ones. It is fit to eat as soon as colored, two weeks ahead of Concord. Herbert, in my judgment, is the best later black. Barry and Wilder are fine. Moore's Early has once or twice given me a good crop, and it is so early as to be very valuable when you get fruit; but it is tricky. August Giant is worthy of mention as a large grape of good quality, a little later than Concord, and an extraordinary grower.

Our list, except for experiment, may be greatly shortened. Take Hayes, Diamond, Niagara for white; Brighton, Gaertner and Delaware for red; Worden and Herbert for black, and then pet Iona and Goethe, and you have ten as good as you need.

There should be a much more liberal planting of Grapes for home use. When only one vine is planted, take Worden. For two, Worden and Niagara.

Clinton, N. Y. *E. P. Powell.*

Timely Hints for Fruit Growers.

THOSE persons who are making preparations to plant new fruit gardens or to add to their old ones during the present autumn should remember that there are many old trees which have lost their vigor, and bear reduced crops, with poorer quality. In some cases a more satisfactory result may be obtained by restoring the old trees than by planting new ones, giving immediate and larger crops than the young trees, which require years to come into bearing. There are two means by which old trees may be restored—pruning and enriching cultivation. The pruning must be moderate and judiciously applied, taking out all dead limbs if present, and giving mellow cultivation in connection with manuring, either broadcast over the orchard or in broad circles around the trees as far from the trunk as the height of the tree. Heavy top-dressing with manure will accomplish much even on grass land without cultivation. We have known this treatment, applied to trees which had many dead twigs and branches and had nearly ceased bearing, to restore them to strong and healthy growth, affording crops of fruit, the specimens as large and fine as those growing on young trees. An essential requisite for such success is in undertaking no more than can be accomplished, and not spreading the enriching process over much ground.

Apple-trees require less frequent renewal than some other fruit-trees, and under the best management will grow and bear well in the more eastern states for fifty years or more, and half that period at the west; sometimes they have lived to seventy or eighty years. Those which stand in the corners of cultivated gardens, where they receive all the requirements for good culture, generally outlive all others.

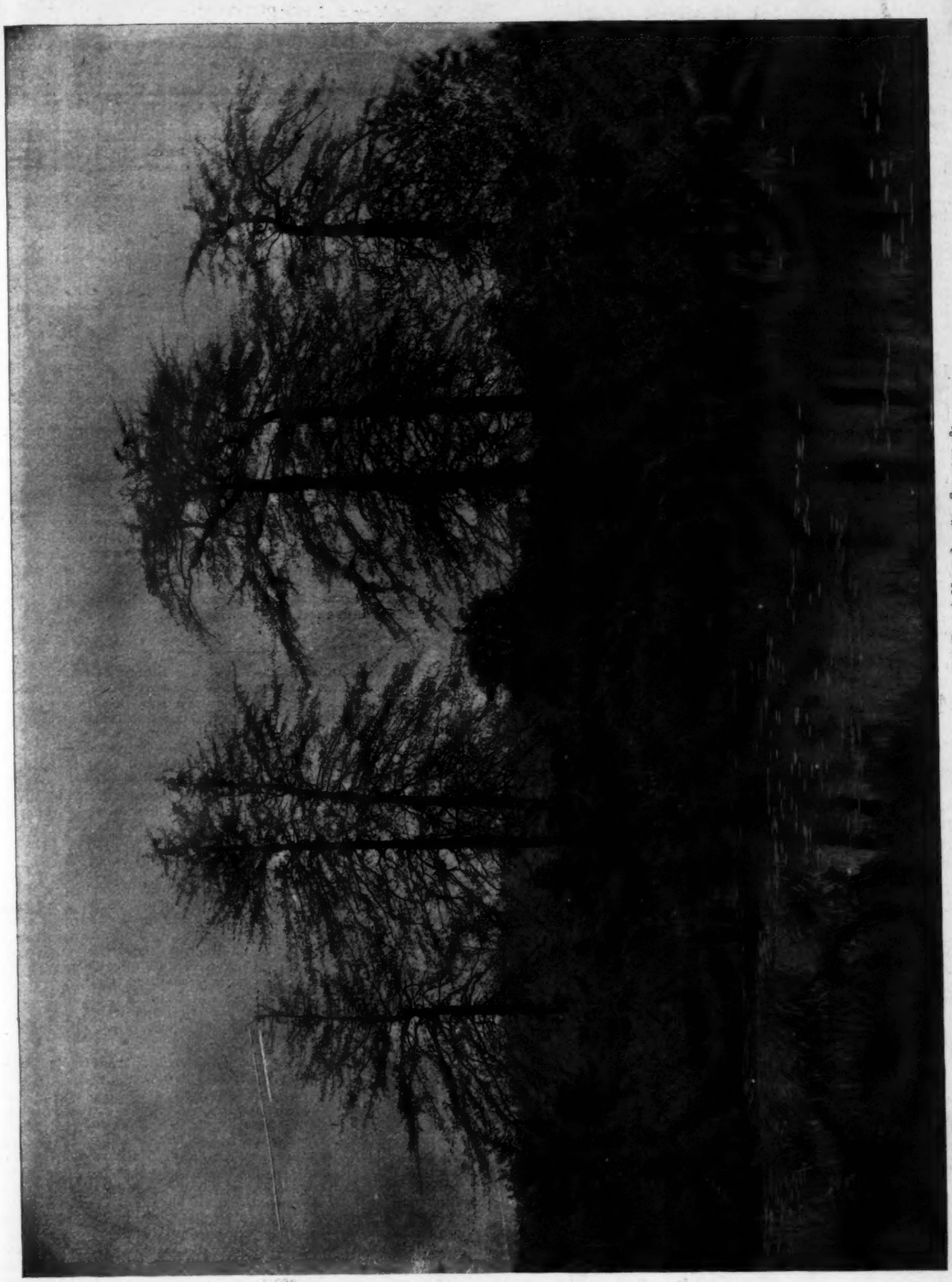
A moderate amount of pruning, especially of dead limbs, may be performed in autumn, but if the trees receive much cutting it makes them more tender for the time, and the work should be left till early spring.

It is often desired to increase and extend old orchards which give fruit for family use, and when this is the case a careful selection of varieties is better than a larger indiscriminate number. A succession, which will afford fruit for the table or for cooking during every day in the year, will be especially valuable. As the earliest fruit continues for a short time only, fewer trees will be required; autumn varieties keep longer, and larger quantities will be needed; while long-keeping winter apples, to supply a period of as many months as the early sorts do for summer, should constitute two-thirds or three-fourths of the whole planting.

The same care must be given in providing a well-prepared piece of ground for other fruits. With Peach-trees clean and mellow cultivation is more important than with most other fruits; while Cherries will endure short grass and moderate fertility. Plums generally do better with rich, cultivated land, and are stunted in grass or in a hard soil and thick crust. A top-dressing with manure on soils where the leaf-blight prevails often prolongs the season of growth; and vigor imparted to Peach-trees early in the season is the best remedy for the curl of the leaf.

As a summary, therefore, or general directions, there are two points to be well borne in mind in planting fruit-trees, whether in autumn or in spring, namely, well prepared, enriched and well cultivated land; and then only as many trees set out as can receive the best attention—selecting those which will afford as nearly a regular succession as practical. Productive varieties will be more profitable in supplying the family than thin and uncertain bearers; and it will cost no more to set such as are of delicious quality than those that are unfit to eat. And the importance of good cultivation must be constantly and at all times remembered, and the great superiority borne in mind of such fruit as comes from well treated trees. A single tree, under the best treatment, may give handsome, juicy, delicious specimens, fit to grace the finest table, and gratify the most refined appetite, and be incomparably better than the product of a dozen neglected trees with their scabby, distorted, insect-bitten specimens and poor flavor. Plant moderately, therefore, and give the most thorough culture, as the cheapest way to obtain full and satisfactory returns.

—*The Country Gentleman.*



The Tupelo Tree (*Nyssa aquatica*) in Eastern Massachusetts.—See page 485.

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Cannas may remain out-doors until the foliage has been marked by the frost, as one likes to enjoy these noble plants as long as possible, and the first light touch of frost will do no harm to the roots. It is well to save some seed of Cannas and sow it during the winter or early spring, as the seedlings frequently vary considerably from the parent plant. If the seed be selected from some of the improved varieties, it is quite probable that something of value may be secured among the seedlings.

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The various bulbs for winter forcing will also be received about this time, or in some cases earlier, and should forthwith be potted or boxed, as the case may be. No time should be lost in potting up bulbs of *Lilium longiflorum*, so that their growth may be made steadily, and without unnecessary forcing, though it should be remembered that if the latter plants are required to be in bloom at Easter calculations must be made accordingly, and it must be borne in mind that next Easter will fall on a much earlier date than the last one. Lily-of-the-Valley, unless specially ordered for early forcing, will probably not be received until the last of October or beginning of November.

Some strong plants of *Deutzia gracilis*, and also some clumps of *Astilbe Japonica*, should be potted, since both these plants are particularly useful for white flowers during the latter part of the winter and early spring; but as both are perfectly hardy, they can, of course, remain in the ground until the more tender plants are disposed of.

Any necessary repairs, such as painting, glazing, etc., that have not been attended to during the summer, should be made at once, because the condensation of moisture on the roof of a greenhouse becomes much greater as the nights get cooler, and it is therefore more difficult to find the roof dry enough for such repairs than it would have been earlier in the season. On an old roof many leaks may be stopped by the application of liquid putty or thick paint with a putty-bulb. It takes but a short time to apply the liquid to each strip on a house 100 feet long, and the escape from drip thus secured is a great comfort for so small an outlay. A good mixture for this purpose is composed of equal portions of white lead and putty, mixed with enough good linseed oil to give the required consistency.

Holmesburg, Pa. *W. H. Taplin.*

Spanish and English Iris.—These are the most common of the bulbous section of this genus and are very charming when grown in masses. The flowers have a good range of shades of yellow, bronze, blue and purple, and, being freely produced, the plants are in bloom for several weeks. While the bulb-dealers distribute a fair number of these bulbs every season, they do not seem to survive in gardens, or at least in those in which no care is given to the special requirements of plants. Bulbs of these Irises are hardy in a suitable position, and there should be success in growing them where their requirements are understood. In their native haunts they are subject to extremes of dryness and moisture, so they should be planted in a deep border, where in summer they will receive little or no moisture, and, if possible, a good baking. In winter and spring they will have moisture enough anywhere outside in this climate. Under the south wall of the house is a good position for these bulbs, and in such a place they do well with me, living and flowering freely. There is one point, however, which requires attention: the bulbs must be frequently separated and replanted, certainly as often as every other year; otherwise, as they break up so freely, they will overcrowd each other and starve out. Mr. Orpet's mention of these bulbs led me to look to my stock, and I find that last year's flowering bulbs have each thrown off four or five well developed offsets. These quickly came to flowering size.

Iris reticulata is another hardy bulb which requires a little care in placing, the main point with this being to plant it in a position where it will not start so early that hard frosts and high winds later will cut it off. Its fault is its precocity of bloom. This bulb forces readily, and its Violet-scented flowers are attractive though not very showy. Varieties of *I. reticulata* and allied species are now becoming numerous in cultivation and make interesting groups. Single specimens are not at all conspicuous. It would be interesting to know what proportion of the *I. Susiana* tubers, distributed every year by the bulb dealers, are flowered. This and allied species will by no chance succeed under careless treatment, as will many plants. It is usually recommended that they be planted in late winter in a cold frame. It should be added that in such a position they must have all the air possible. Good success can be had with them by planting in a warm border as late in the year as possible and mulching with six inches or so of

forest leaves. If planted early they quickly start leaves, and hard freezing or high winds are then fatal to their flowering. There is a world of interest in a general collection of hardy bulbs, and they are especially useful in a small garden, often enabling one to practically double crop valuable space.

Montbretia crocosmiæflora, the result of a cross between *Montbretia Pottsii* and *Tritonia aurea*, produced by Monsieur Lemoine some ten years ago, has been a valued plant in many gardens since its first introduction, but apparently is not as widely distributed as it should be. Since the introduction of the first hybrid, Monsieur Lemoine has each year offered one or more varieties differing somewhat in the size of individual flowers, but principally in the coloring and markings, in a rather limited range of yellows and brilliant, warm, deep reds and their combinations. The effect of a mass of these flowers in the late summer is very distinct, neat and bright, without glare. In choosing varieties one can scarcely go amiss; the original hybrid being entirely satisfactory—and, of course, obtainable at the lowest price—while the more recent ones are all interesting, though the colors have such a narrow range that at a distance a casual observer would judge them the same; a flower fancier, however, does not collect for the casual observer. Color descriptions are unsatisfactory at best, and it is quite impossible to define shades of red (a color which many people cannot even distinguish), but of a few varieties under trial may be noted: Phare, of a deep flaming orange-red; Etoile de Feu, a deeper shade, burnt orange; Bouquet Parfait, a slightly different shade of fiery red, and with larger individual flowers. These all have deep yellow eyes. Elegans is exceptionally distinct; clear yellow inside and splashed red without. The flowering habit of this variety seems specially graceful. A few others differ much on the same lines, and are all attractive. Montbretias need a well drained, deep and moist soil, in which the corms are usually hardy, though not always in this locality. They increase very rapidly, not only by multiplication from the parent, but by pushing out underground stems, from which new plants are rapidly produced. They also seed freely, and from this they will come into bloom in a few months. They are also neat plants for the decoration of the greenhouse in summer, as they grow away freely if not overpotted and bloom for a long season. Individually the flowers are not very lasting, but they are produced in rapid succession.

Elizabeth, N. J. *J. N. G.*

Nymphæa Devoniensis, though not new, may still be styled a novelty and has a special claim on our attention. While all other Water Lilies, with perhaps the exception of *N. dentata*, are past bloom for the season this is yet blooming freely, and is seen more now than at other times, because the flowers remain open during dull and sunless days while others are closed. This is truly an autumn flowering Water Lily. To prolong the season of this charming plant a shallow tank from twenty to twenty-four inches deep and any convenient size should now be in readiness to protect them in the latitude of New York, and earlier further north. I have nursery tanks twelve feet long, six feet wide and twenty inches deep. Plants grown in tubs and sunk in the Lily-pond are transferred to the tank, and an ordinary garden-frame with sashes can be placed over them. This protection will be sufficient to keep the plants flowering till the end of October. Other varieties can be protected in the same way.

Dongan Hills, Staten Island. *W. Tricker.*

Figs in the Open Air.—The growing of Figs without glass in the northern states is not uncommon, and yet it was not until this summer that I saw them so grown for the first time in the gardens of Mr. H. P. McKean, of Germantown, and full of delicious ripe fruit. The only special treatment given in this instance is the burying of the trees when winter comes. The earth is thrown out on one side, the branches are bent over and kept down by stout pegs driven into the ground, and then the earth is thrown back to cover the branches to a depth of about six inches. These trees of Mr. McKean's are now about ten feet in height. On their north-east side a board fence has been erected to keep off cold winds in early spring and to give warmth to induce early growth. It should be borne in mind that they need a sunny place, otherwise some of the fruit will not have time to ripen before cold weather comes. It has been suggested that in planting, the roots should all be spread on one side only, so as to allow of the tops to be bent over in the same direction when the time for covering the tree arrives.

Germantown, Pa. *Joseph Meehan.*

Clematis paniculata.—Allow me to add a word on the good qualities of this plant. I assume that it is correctly named, although this has been disputed. However this may be, it has a vigor of constitution rarely found among Clematises not native. It blooms freely and late, and has a fragrance which resembles that of the Hawthorn as much as anything I can recall. It can be grafted readily on *C. Virginiana*, and also comes here from seed; but this is slow to germinate, although I think seedlings make rather the strongest plants.

Wellesley, Mass. *T. D. Hatfield.*

[Not having seen Mr. Hatfield's plants, we cannot be sure of their identity. The note in our last issue referred to a plant which came from the Passaic Nurseries of H. Meyers, successor to Woolson & Co., and it is the true *Clematis paniculata.*—Ed.]

Correspondence.

The Condition and Future of the American Forests.

To the Editor of Garden and Forest:

Sir.—I have never read anything which seems to me more graphic and true, and, at the same time, more lamentable, than the picture painted by Dr. Mayr of the condition of the American forests, and translated in your paper of September 10th. I venture to suggest that your Government, which does a vast amount of public printing, would render a public service by sending a copy of this article to every American citizen; for though it is not always pleasant to hear criticisms from a foreigner, and though it is not always possible for a foreigner to suggest a remedy or to appreciate fully the great difference which exists between the conditions of the American system of self-government and those of older countries, yet this question must be faced and dealt with before long.

The time will come when the names of those persons who have made it the business of their lives to bring home the condition of the national forests to the people will be honored as citizens who have deserved well of their country. The Russians have been described by an eminent German naturalist as "everywhere true wasters and destroyers of forests," but from what little I have seen myself in a single journey of about 10,000 miles through the United States, I do not think they can compare with the Americans; and speaking as an English farmer and as an Indian Tea-planter, who has seen in many parts of Europe and Asia the results of destroying the forests and skinning the land for the sake of a short-lived profit, I do believe that every foot of timber and every bushel of corn or wheat which you are sending us at a ridiculous price, will ultimately cost the American nation much more than their present value. Look at the present state of the forests and the land in many parts of the United States, and see what it will some day cost to restore the soil to a condition in which successful agriculture is possible, and consider what a poor return you are getting for this enormous present waste. What is the value of a few thousand Alaska seal-skins or a few ship-loads of Canadian fish compared to the value of the American public forests? and yet how much do we hear of the former in the debates of your Congress or in the speeches of your public men!

I cannot help thinking that the best possible remedy at present is suggested in your editorial article on "The Army and the Forests," and I can testify from personal experience of the success of this plan in the Yellowstone Park. When the British-Indian Forest Department was first created most of its officers were taken from the army, and though they lacked the technical knowledge, which is now supposed to be all-important, and to be gained only in the forest-schools of France and Germany, they had other qualities which are often wanting in the young men who now recruit the forest-service. For years to come the questions which will be most prominent will not be those requiring technical knowledge so much as common sense, tact and energy in enforcing the regulations which will be made after considering local needs and actual forest-conditions. And above all, you will find among the officers in the army men of such unimpeachable honesty that they will not be open to such criticisms and attacks as were formerly made upon the employees of the Indian agencies, and they will be removed from those political influences which seem to us to play such a prominent part in Government affairs in America.

From a soldier's point of view I would suppose that, considering the great influence upon the character of military operations which the wooded nature of the country has always had in the United States, an intimate knowledge of forest-operations and forest-life would be of more advantage to the American army than to any European troops. We know by experience that the Ghoorkas, who are bred and born in

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The various bulbs for winter forcing will also be received about this time, or in some cases earlier, and should forthwith be potted or boxed, as the case may be. No time should be lost in potting up bulbs of *Lilium longiflorum*, so that their growth may be made steadily, and without unnecessary forcing, though it should be remembered that if the latter plants are required to be in bloom at Easter calculations must be made accordingly, and it must be borne in mind that next Easter will fall on a much earlier date than the last one. Lily-of-the-Valley, unless specially ordered for early forcing, will probably not be received until the last of October or beginning of November.

Some strong plants of *Deutzia gracilis*, and also some clumps of *Astilbe Japonica*, should be potted, since both these plants are particularly useful for white flowers during the latter part of the winter and early spring; but as both are perfectly hardy, they can, of course, remain in the ground until the more tender plants are disposed of.

Any necessary repairs, such as painting, glazing, etc., that have not been attended to during the summer, should be made at once, because the condensation of moisture on the roof of a greenhouse becomes much greater as the nights get cooler, and it is therefore more difficult to find the roof dry enough for such repairs than it would have been earlier in the season. On an old roof many leaks may be stopped by the application of liquid putty or thick paint with a putty-bulb. It takes but a short time to apply the liquid to each strip on a house 100 feet long, and the escape from drip thus secured is a great comfort for so small an outlay. A good mixture for this purpose is composed of equal portions of white lead and putty, mixed with enough good linseed oil to give the required consistency.

Holmesburg, Pa. *W. H. Taplin.*

Spanish and English Iris.—These are the most common of the bulbous section of this genus and are very charming when grown in masses. The flowers have a good range of shades of yellow, bronze, blue and purple, and, being freely produced, the plants are in bloom for several weeks. While the bulb-dealers distribute a fair number of these bulbs every season, they do not seem to survive in gardens, or at least in those in which no care is given to the special requirements of plants. Bulbs of these Irises are hardy in a suitable position, and there should be success in growing them where their requirements are understood. In their native haunts they are subject to extremes of dryness and moisture, so they should be planted in a deep border, where in summer they will receive little or no moisture, and, if possible, a good baking. In winter and spring they will have moisture enough anywhere outside in this climate. Under the south wall of the house is a good position for these bulbs, and in such a place they do well with me, living and flowering freely. There is one point, however, which requires attention: the bulbs must be frequently separated and replanted, certainly as often as every other year; otherwise, as they break up so freely, they will overcrowd each other and starve out. Mr. Orpet's mention of these bulbs led me to look to my stock, and I find that last year's flowering bulbs have each thrown off four or five well developed offsets. These quickly came to flowering size.

Iris reticulata is another hardy bulb which requires a little care in placing, the main point with this being to plant it in a position where it will not start so early that hard frosts and high winds later will cut it off. Its fault is its precocity of bloom. This bulb forces readily, and its Violet-scented flowers are attractive though not very showy. Varieties of *I. reticulata* and allied species are now becoming numerous in cultivation and make interesting groups. Single specimens are not at all conspicuous. It would be interesting to know what proportion of the *I. Susiana* tubers, distributed every year by the bulb dealers, are flowered. This and allied species will by no chance succeed under careless treatment, as will many plants. It is usually recommended that they be planted in late winter in a cold frame. It should be added that in such a position they must have all the air possible. Good success can be had with them by planting in a warm border as late in the year as possible and mulching with six inches or so of

forest leaves. If planted early they quickly start leaves, and hard freezing or high winds are then fatal to their flowering. There is a world of interest in a general collection of hardy bulbs, and they are especially useful in a small garden, often enabling one to practically double crop valuable space.

Montbretia crocosmiæflora, the result of a cross between *Montbretia Pottsii* and *Tritonia aurea*, produced by Monsieur Lemoine some ten years ago, has been a valued plant in many gardens since its first introduction, but apparently is not as widely distributed as it should be. Since the introduction of the first hybrid, Monsieur Lemoine has each year offered one or more varieties differing somewhat in the size of individual flowers, but principally in the coloring and markings, in a rather limited range of yellows and brilliant, warm, deep reds and their combinations. The effect of a mass of these flowers in the late summer is very distinct, neat and bright, without glare. In choosing varieties one can scarcely go amiss; the original hybrid being entirely satisfactory—and, of course, obtainable at the lowest price—while the more recent ones are all interesting, though the colors have such a narrow range that at a distance a casual observer would judge them the same; a flower fancier, however, does not collect for the casual observer. Color descriptions are unsatisfactory at best, and it is quite impossible to define shades of red (a color which many people cannot even distinguish), but of a few varieties under trial may be noted: Phare, of a deep flaming orange-red; Etoile de Feu, a deeper shade, burnt orange; Bouquet Parfait, a slightly different shade of fiery red, and with larger individual flowers. These all have deep yellow eyes. Elegans is exceptionally distinct; clear yellow inside and splashed red without. The flowering habit of this variety seems specially graceful. A few others differ much on the same lines, and are all attractive. Montbretias need a well drained, deep and moist soil, in which the corms are usually hardy, though not always in this locality. They increase very rapidly, not only by multiplication from the parent, but by pushing out underground stems, from which new plants are rapidly produced. They also seed freely, and from this they will come into bloom in a few months. They are also neat plants for the decoration of the greenhouse in summer, as they grow away freely if not overpotted and bloom for a long season. Individually the flowers are not very lasting, but they are produced in rapid succession.

Elizabeth, N. J. *J. N. G.*

Nymphæa Devoniensis, though not new, may still be styled a novelty and has a special claim on our attention. While all other Water Lilies, with perhaps the exception of *N. dentata*, are past bloom for the season this is yet blooming freely, and is seen more now than at other times, because the flowers remain open during dull and sunless days while others are closed. This is truly an autumn flowering Water Lily. To prolong the season of this charming plant a shallow tank from twenty to twenty-four inches deep and any convenient size should now be in readiness to protect them in the latitude of New York, and earlier further north. I have nursery tanks twelve feet long, six feet wide and twenty inches deep. Plants grown in tubs and sunk in the Lily-pond are transferred to the tank, and an ordinary garden-frame with sashes can be placed over them. This protection will be sufficient to keep the plants flowering till the end of October. Other varieties can be protected in the same way.

Dongan Hills, Staten Island. *W. Tricker.*

Figs in the Open Air.—The growing of Figs without glass in the northern states is not uncommon, and yet it was not until this summer that I saw them so grown for the first time in the gardens of Mr. H. P. McKean, of Germantown, and full of delicious ripe fruit. The only special treatment given in this instance is the burying of the trees when winter comes. The earth is thrown out on one side, the branches are bent over and kept down by stout pegs driven into the ground, and then the earth is thrown back to cover the branches to a depth of about six inches. These trees of Mr. McKean's are now about ten feet in height. On their north-east side a board fence has been erected to keep off cold winds in early spring and to give warmth to induce early growth. It should be borne in mind that they need a sunny place, otherwise some of the fruit will not have time to ripen before cold weather comes. It has been suggested that in planting, the roots should all be spread on one side only, so as to allow of the tops to be bent over in the same direction when the time for covering the tree arrives.

Germantown, Pa. *Joseph Meehan.*

Clematis paniculata.—Allow me to add a word on the good qualities of this plant. I assume that it is correctly named, although this has been disputed. However this may be, it has a vigor of constitution rarely found among Clematises not native. It blooms freely and late, and has a fragrance which resembles that of the Hawthorn as much as anything I can recall. It can be grafted readily on *C. Virginiana*, and also comes here from seed; but this is slow to germinate, although I think seedlings make rather the strongest plants.

Wellesley, Mass. *T. D. Hatfield.*

[Not having seen Mr. Hatfield's plants, we cannot be sure of their identity. The note in our last issue referred to a plant which came from the Passaic Nurseries of H. Meyers, successor to Woolson & Co., and it is the true *Clematis paniculata.*—Ed.]

Correspondence.

The Condition and Future of the American Forests.

To the Editor of Garden and Forest:

Sir.—I have never read anything which seems to me more graphic and true, and, at the same time, more lamentable, than the picture painted by Dr. Mayr of the condition of the American forests, and translated in your paper of September 10th. I venture to suggest that your Government, which does a vast amount of public printing, would render a public service by sending a copy of this article to every American citizen; for though it is not always pleasant to hear criticisms from a foreigner, and though it is not always possible for a foreigner to suggest a remedy or to appreciate fully the great difference which exists between the conditions of the American system of self-government and those of older countries, yet this question must be faced and dealt with before long.

The time will come when the names of those persons who have made it the business of their lives to bring home the condition of the national forests to the people will be honored as citizens who have deserved well of their country. The Russians have been described by an eminent German naturalist as "everywhere true wasters and destroyers of forests," but from what little I have seen myself in a single journey of about 10,000 miles through the United States, I do not think they can compare with the Americans; and speaking as an English farmer and as an Indian Tea-planter, who has seen in many parts of Europe and Asia the results of destroying the forests and skinning the land for the sake of a short-lived profit, I do believe that every foot of timber and every bushel of corn or wheat which you are sending us at a ridiculous price, will ultimately cost the American nation much more than their present value. Look at the present state of the forests and the land in many parts of the United States, and see what it will some day cost to restore the soil to a condition in which successful agriculture is possible, and consider what a poor return you are getting for this enormous present waste. What is the value of a few thousand Alaska seal-skins or a few ship-loads of Canadian fish compared to the value of the American public forests? and yet how much do we hear of the former in the debates of your Congress or in the speeches of your public men!

I cannot help thinking that the best possible remedy at present is suggested in your editorial article on "The Army and the Forests," and I can testify from personal experience of the success of this plan in the Yellowstone Park. When the British-Indian Forest Department was first created most of its officers were taken from the army, and though they lacked the technical knowledge, which is now supposed to be all-important, and to be gained only in the forest-schools of France and Germany, they had other qualities which are often wanting in the young men who now recruit the forest-service. For years to come the questions which will be most prominent will not be those requiring technical knowledge so much as common sense, tact and energy in enforcing the regulations which will be made after considering local needs and actual forest-conditions. And above all, you will find among the officers in the army men of such unimpeachable honesty that they will not be open to such criticisms and attacks as were formerly made upon the employees of the Indian agencies, and they will be removed from those political influences which seem to us to play such a prominent part in Government affairs in America.

From a soldier's point of view I would suppose that, considering the great influence upon the character of military operations which the wooded nature of the country has always had in the United States, an intimate knowledge of forest-operations and forest-life would be of more advantage to the American army than to any European troops. We know by experience that the Ghoorkas, who are bred and born in

mountain-forests and the best forest-workers we have in India, are also the best soldiers, and that their officers are among the most active and keen hunters in the Indian army. Quartered for the most part in detachments and out-posts on the frontiers, they live under very similar conditions to those which would be endured by detachments of troops engaged in guarding and supervising the state forests in America, and judging from what I have seen in the west I think that soldiers alone would be able to enforce the law in the Rocky Mountains under the existing conditions of society.

But it is not for me to do more than support, by such testimony as I can give, the very urgent nature of the questions which your paper was founded to discuss, and which it has so ably set before the public.

Cirencester, England. *H. J. Elwes.*

Naturalization of American Conifers in Belgium.

To the Editor of Garden and Forest:

Sir.—The experiments which have been made in Belgium in the cultivation of North American conifers have been most successful. Unfortunately, such experiments have been unnecessarily expensive through the difficulty of obtaining good seeds, and I should be glad to establish friendly relations with reliable botanists and lovers of trees in the United States for the purpose of obtaining supplies of coniferous trees and seeds, and it is with this object in view that I address these lines to Garden and Forest.

We find in Belgium that the Douglas Fir grows most thriftily when it is planted in deep sandy soil in positions where it can be sheltered from severe winds during its early years in order that the shoots which sometimes grow late in the season may not suffer in the cold of exceptional winters. Many Belgian land-owners have planted this tree in large masses, and the way in which the most vigorous specimens here have flourished is exceedingly encouraging. Unfortunately, the young plants found in our nurseries have, in many cases, proved disappointing, and we need to be brought into direct communication with American seedsmen able to supply good seeds at reasonable prices. If this is done, there is hope of making this tree generally known in Belgium.

Abies balsamea is a pyramidal tree here, resembling somewhat the European Silver Fir (*A. pectinata*). It does not, however, attain the same size or live as long. In Belgium it reaches a mean height of forty-eight feet, and is relatively somewhat stunted in comparison with the other species of the genus; nevertheless, on account of its rapid growth in land underlaid with moist gravel, this species is not without value. I know of a plantation at Hastière, near Dinant, which is growing vigorously, and, although the specimens are planted too far apart, the terminal shoots are nearly three feet long, or sometimes more. I have no knowledge of the timber of this species. The straight, slender poles which it furnishes have, however, a considerable value.

A. grandis is a handsome and vigorous tree here, attaining in its native country a height of more than 250 feet, and a trunk diameter of four or five. It grows on flat lands with a humid subsoil and does not flourish in the mountains. The few strong, well grown specimens which I have seen in this country inspire hope of its successful naturalization in our plantations; indeed, the growth of this tree is very vigorous here, the terminal shoots attaining a length of nearly forty inches. Unfortunately, young plants of this species, as is the case with those of the Douglas Fir, are still quoted at such high rates that many planters are deterred from experimenting with them.

The California Mountain Hemlock (*Tsuga Pattoniana*), which attains in its native country a large size, grows at first very slowly in Belgium. When it is ten or fifteen years old, however, the plants begin to increase rapidly, and from that time forward they are very luxuriant, with terminal shoots more than a foot long. This species we find does best on hillsides where the soil is light and deep. It bears our most severe winters, and, were it not for the scarcity and the high price of the young plants, it would be particularly useful for planting in groups in the sandy hill parts of Belgium.

The White Pine (*Pinus Strobus*) was introduced into France in 1705, and its value as a forest-tree here is now well known; indeed this species, with its luxuriant growth and tall trunk terminated by a majestic crown of foliage, has gained a notable position in our forests. It has the great merit of being able to grow in damp soil. I have seen specimens cut which were nearly eighty years old with a trunk diameter of three feet at the ground. Such trees have found buyers at an average price of $25.

In those parts of Belgium where the soil is heavy and retains moisture the behavior of this Pine is also satisfactory, equaling that of *Pinus sylvestris*. We do not, however, know of any large plantations, the White Pine being always associated with other conifers such as *Pinus sylvestris*, *Pinus Austriaca* and *Larix Europæa*. It is often planted as an ornamental tree, and when fully exposed to the air and light it grows very rapidly. The wood is highly valued.

Pinus Sabiniana is with us still only an ornamental species; it grows well, but is still difficult to obtain from our nurserymen, and is always high-priced; nevertheless, the few specimens that I know are doing well. This California species should be more generally introduced into our forests.

Thuya gigantea and *Libocedrus decurrens*, both of which produce wood valuable for the cabinet-maker, would find ready buyers at remunerative prices. Unfortunately, they both grow slowly; at least such is the case with trees twenty-five years planted that I know here. They are not, perhaps, in proper soil or sufficiently sheltered. Their height is not more than twenty-five or thirty feet, with a diameter of trunk very large at the base in proportion to the height of the trees.

I believe that they are both valuable trees where time is not an important element, and certainly slowness of growth in a tree should not dissuade wealthy men, who can afford to wait, from experimenting with them. It is true of these California trees, as it is with Oak, the planter must know how to wait.

Nimy, Belgium. *Alfred Wesmael.*

An Artificial Garden Effect.

To the Editor of Garden and Forest:

Sir.—There are growing in this neighborhood a couple of good-sized Beech-trees, which, by reason of their convenient location, are made to support a large double gate and to mark the entrance from a public road to a cultivated field. A number of years ago these trees were subjected to a close and general lopping off of their branches to within six or eight feet of their tops. The result of this operation was that the main stems, which in these instances were rather tall and straight, sent out innumerable sprouts from bottom to top. These new sprouts or branches seem to be of a uniform length of five or six feet, and with their uniformly heavy coat of leaves, form a towering and dense mass of foliage as nearly true and symmetrical in outline as if cut to a model. At a little distance it is suggestive of great masses of vines dependent from the (concealed) limbs of tall stumps. The effect is a most striking one, and can lay claim to elements of beauty essentially its own. But it is in the winter season they present the most remarkable effect. A peculiarity of the new shoots is that they tenaciously hold their leaves, and while the only change in the general aspect is in the coloring, the trees necessarily stand out more prominently and become more marked features in the winter landscape.

The owner's only object doubtless in despoiling those trees was to secure a couple of convenient gate-posts, while he got rid of their offending features in shading valuable ground. But he secured at the same time a unique piece of ornamentation which does not appear in its artificial features inconsistent with the general design of a gate-way entrance to cultivated grounds.

In the facts here given is there not a hint of what might be accomplished in certain possible contingencies in producing garden effects? As when a tree is out of place or is not wanted, or an artificial effect is desired or justified, and especially when it is wanted to produce a winter effect. I have long observed that the second growth of branches, or the shoots which result from a general cutting away of the original branches of certain trees, have a tendency to hold their leaves well on into the winter. It need scarcely be added that none of these new branches or sprouts, by reason of their great number, are likely to develop into large limbs, and therefore the resultant shape of the tree is practically permanent.

Fairview, W. Va. *W. E. Hill.*

The Fay Currant.

To the Editor of Garden and Forest:

Sir.—I observe some discussion in regard to the merit of Fay's Currant as compared with the Versailles. The Cherry and Versailles have been the leading red Currants for years owing to their superiority in size over the Red Dutch, Victoria and other red sorts. The Cherry is notoriously a poor bearer, producing much blind wood—that is, wood without eyes or fruit-buds. This defect seems to vary in the same plants in different seasons, but the fruit is large, handsome and attractive, and it meets with popular favor.

The Versailles produces fruit fully as large as the Cherry, and, I think, sometimes a little better in quality and more of it. Occasionally it carries too much blind wood, and thus demonstrates its nearness of kin to the Cherry; but this is not a serious fault.

The Fay Currant is much more productive than the others; the fruit is quite as large, and the quality is no way inferior. It has the fault, however, of a procumbent tendency. The plants seem determined to develop a trailing habit, very different from that of the erect Versailles. Many of the shoots starting from the base of the plant will run out on the ground and curve up their ends a few inches high, a habit which I dislike very much; and yet I shall set more of them. Of late years we have seldom secured full and perfect clusters of this fruit, because the unfavorable weather at the time of blooming, or some other cause, has prevented the later blossoms from setting. The clusters, therefore, are only about half as long as nature intended them to be. But after all, the Fay seems a great step forward in the development of this fruit, although the ideal Currant has not yet been produced.

Montclair, N. J. *E. Williams.*

Recent Publications.

A recent issue of the *Bulletin of Miscellaneous Information* issued by the authorities of the Royal Gardens, Kew, contains an important paper upon the *Fibre Industry at the Bahamas.* It appears from a report of the United States Consul at Nassau, reproduced in the Bulletin, that the progress made in the development of Sisal culture (Sisal hemp being the product of a species of Agave—*A. rigida*, var. *Sisaliana*) during the past twelve months has been marvelous. A year ago there was scarcely a dollar of foreign capital, and very little local capital, invested in this business in the Bahamas, while to-day capitalists from Great Britain, Canada and Newfoundland are buying up Government land by thousands of acres, and are setting to work industriously in clearing and planting as fast as they are able to procure plants for the purpose. Mr. McLain, our Consul, writing on the 20th of January last, reports:

"Small shipments of fibre continue to be made by nearly every steamer, a few old plantings furnishing the material. It is not likely that shipments in any quantity will be possible under two years, but after that time an enormous increase may begin to be looked for, increasing steadily as new fields come into bearing, until the annual exports of the colony, which now average about $600,000, will leap well up into the millions, as a moment's reflection will show.

"It is a very low estimate to expect half a ton of fibre per acre, and a very low estimate to call it worth $100 per ton, for it is worth over $200 per ton in the world's markets to-day. When even the present quantity of land sold and applied for, to wit, 300,000 acres, is bearing, which ought to happen within five or six years, it will produce 150,000 tons a year, worth $15,000,000, an increase of prosperity that sounds more like a fairy tale than a strong probability deduced from reasonable figures. And yet 300,000 acres is but a small portion of the uncultivated lands within the limits of the Bahamas.

"It is estimated that about 6,000 acres of land have already been planted in Sisal (a plantation once started needs no replanting for many years), and that many additional ones have been cleared and made ready for the plants, the obtaining of which has been almost impossible, the industry being seriously retarded thereby. The prices paid for plants have risen from six cents per dozen to thirty-six cents, so great has been the demand; but the price will now decline rapidly since the supply of plants is developing enormously, about 2,000,000 being now available for planting and others coming on speedily.

"The Pita plant is being found on all the islands growing wild, and the stock of old plants is very great. From the centre of the old plant rises a pole about sixteen feet in length, on the branches of which small plants grow, averaging a thousand to each pole, and from these poles a vast supply is coming into market, creating a profitable business; for what were two years ago only noxious weeds have all at once become worth $20 apiece for pole plants alone. Quantities of old plants have lately been discovered growing on the keys along the Florida coast, and small schooners are already buying these up and bringing them here for sale. This fact suggests the question whether this new hemp industry, which is about to revolutionize the condition of the Bahamas, may not also be developed in the southern portion of Florida. The plants are found there growing wild just as they are in these islands, and they flourish best in dry, sandy soils fit for little else. I would earnestly call the attention of the Department of Agriculture to this matter, and suggest the propriety of looking into it, and of calling the notice of the people of Florida to this possible source of wealth and prosperity. The conditions of soil, climate, etc., which make its culture a success here, may not obtain there, but the simple fact that the plant is growing wild in Florida is of itself a consideration that should warrant an investigation at the hands of the Department. . . . . .

"There can be no doubt or question as to the success of Sisal culture in this colony. It has passed far beyond the experimental stage, and is giving daily evidence that it will become a source of wealth to all concerned. The combined conditions of soil and climate especially adapted to the growth of first-class fibre give this colony a marked advantage over other West Indian islands, where the plant may grow luxuriantly enough, but will be found deficient in good strong fibre. The poorer and more sterile the soil the better the result, and here the plant flourishes where ordinary vegetation seems almost impossible. It is a plant of unfailing growth, it will live without rain to moisten the soil, you can scarcely exterminate it if you try, it requires but little cultivation, and at an expense below that of almost any other agricultural product, and its value is substantial.

"As two-thirds of the trade of the Bahamas is now with the United States; as their only steam communication with the outside world is by a subsidized line of American steamships running between Nassau and New York; as their increased wealth and prosperity means a larger and more profitable commercial intercourse with our own country, we should view this coming development of their material interests with pleasure, and with the warmest wishes for its complete success."

Meetings of Societies.

Horticulture in New Jersey.

THE fifteenth anniversary meeting of the New Jersey Horticultural Society at New Brunswick last week gave occasion for a brief review of the Society's work and history by Secretary Williams, from which it appeared that the horticulture, and especially the fruit production of the state, owe much of their prosperity to the educating influence of this organization. Members of this society have been among the first to make practical use of scientific discoveries in the study of possible remedies for plant diseases and the ravages of insects; some of them have won honorable distinction. On one of the tables there was an exhibition of pears by Mr. White which bore witness to the efficacy of modern treatment against Fungi. One tree which had been left unsprayed lost all its fruit and foliage by Fungus (*Entomosporium maculatum*), while on the trees treated the fruit and foliage was nearly perfect, and they would probably have been quite so if the spraying had not been discontinued so early. These fruits were an object-lesson to all, and they showed the great advance that has been made in spraying compounds and machines.

The only incident that marred the pleasure of the meeting was the resignation of Secretary Williams, who during the entire life of the Society has labored with untiring zeal for its advancement. The continued ill health of Mr. Williams has compelled him to take this step. The regret at his determination was unanimous, and the resignation was referred to the Executive Committee in the hope that when the time for the annual meeting came round in December his health may be sufficiently improved to warrant his remaining in the service. There are few men in the country whose influence has been more widely felt in the direction of improved horticulture and none whose retirement would be more lamented by the horticulturists of the country. Mr. Williams is a man of singularly pure and honest purpose, and he has no superiors in practical knowledge of the particular branches to which his attention has been directed.

Newark, N. J. *J.*

Notes.

"*Primula obconica* poisonous" has so frequently been the heading of articles in many horticultural journals, foreign as well as American, that the irritating qualities of the plant may now be considered proved beyond a doubt.

A very beautiful colored plate of *Shortia galacifolia* was issued with *The Garden* for August 30th, accompanied by an abstract of its romantic history, drawn from the longer account which was published in Garden and Forest nearly two years ago.

Mr. H. B. Ayers reports the discovery of the Hemlock in Section 10, Township 48, Range 16, Carleton County, Minnesota, thus extending the range of this tree further west than it has been before reported, western Wisconsin having up to the time of Mr. Ayers' discovery been considered its western station.

A new Carnation with unusually distinct stripes of red and white has been sent to this office by Messrs. Peter Henderson & Co. It is said to have originated with Mr. George Bergman, of Flatbush, Long Island, as a sport from Portia, which will account for the vividness of the red in its marking. The flower is very fragrant, and it has been christened The American Flag.

The report of the Botanist of the Nebraska State Board of Agriculture, Dr. Charles E. Bessey, is an admirable monograph on the Grasses and forage plants of that state. Mr. Herbert J. Webber, the Assistant Botanist, adds a "Catalogue of the Flora of Nebraska," which is valuable not only for its facts as to the distribution of the Grasses, trees, shrubs and other higher forms of vegetation, but also for its account of the Fungi and other lower plants, many of which are of direct economic interest to man. Of Grasses proper there are enumerated 106 wild species, besides twenty-two which have been introduced purposely or otherwise by man and have subsequently "run wild" to some extent.

The place which Tuberous Begonias have gained in popular favor is shown by the fact that an English journal recently spoke of a nursery garden where about 200,000 of these plants were growing, all this year's seedlings. Although the season has not favored them, the writer says: "There are many superb flowers in the open ground, but it is upon the plants in pots that the grand flowers are to be seen. Among the white and yellow varieties the greatest improvement appears. Plants with a drooping habit, eminently suited for hanging baskets, are here to be seen heavily laden with bloom, whilst the large pot plants exhibit the point which Mr. Laing had before him in the improvement of the Begonia—namely, erect flowers which can be seen without raising them."

Monsieur Carrière describes and illustrates in the September issue of the *Revue Horticole* a new hybrid Rose produced by a gardener near Paris by crossing the Japanese *Rosa rugosa* with the well known Hybrid Perpetual Madame Abel Carrière. This new addition to the Rose garden is described as a vigorous shrub, forming a stout bush five or six feet high by as much in diameter, with handsome dark green, lustrous foliage and flowers produced in large many-flowered corymbs. They are semi-double, with white or pale pink petals, and the curious thing about them is that the petals are conspicuously and deeply notched or fimbriated at the summit, a peculiarity to which the plant owes its name, *Rosa rugosa fimbriata*. It is described as a continuous bloomer, producing flowers from June until October.

The *Revue Horticole* says: "An idea which at first seems bizarre and a little facetious, but is at bottom very sensible, has just been suggested by Garden and Forest. This is: that hair-pins may be used to fasten to the ground the branches of border plants. The advantages offered by these little instruments, which thus far have had little enough to do with horticulture, are increased by the fact that they are manufactured of different degrees of length and thickness. These new hooks are very strong, and, moreover, very inconspicuous, and modern methods of manufacture render them very cheap." We may add that the neat little bundles in which they are sold seem to make them so convenient to carry, that no gardener need ever be without an immediate remedy for a wayward shoot.

A scheme is afoot for converting the banks of the River Lea into boulevards for the recreation of the inhabitants of East London. It is proposed to acquire strips of land extending for twelve miles and to lay them out as parks, cricket-fields, etc. "The idea," says the *Gardeners' Chronicle*, "is really a somewhat tremendous one, but the most careful inquiry and calculation have led us to the conclusion that it is not only perfectly feasible, but may be carried out to the letter. The advantages to be gained in many ways are simply incalculable. Much of the land is absolutely valueless under the present condition of things. This course, which will unquestionably take effect sooner or later, will not only transform a dull and dangerous part of the country into a series of charming boulevards, but will have the effect of immediately enhancing the value of the property in the vicinity."

In the *Journal of Mycology*, published by the Department of Agriculture, Miss Southworth writes of a new disease of the Hollyhock quite distinct from the well known Hollyhock disease (*Puccinea Malvacearum*), or from the spot disease described by Professor Halsted in the issue of this journal for March 26th, 1890. The trouble made its appearance five years ago, and has proved so destructive where Hollyhocks are grown for bedding purposes that the price of the plants has quadrupled in New York during the past two years. The Fungus attacks leaf, petiole or main stalk; the flow of sap is stopped and the parts of the plant beyond the diseased portion shrink and die. Treatment with the copper solutions was not completely successful this year; but a thorough spraying with Bordeaux mixture on both sides of the leaves as soon as the young ones appear, and again later, should be tried next season. Of course, all diseased plants should be removed from the green-house, and whenever practicable the plants should be grown out-of-doors.

The death of Miss Marianne North, which occurred recently at her home in Gloucestershire, in England, closes the career of a woman of remarkable energy, courage and perseverance—the greatest traveler of all her sex, perhaps, and a charming and sympathetic personality. Ample means and abundant leisure made Miss North a traveler, and a traveler whose journeys produced visible results, which have served to instruct and delight the world. Long ago she formed the idea of turning her skillful brush to good account, and all her later and most difficult journeys were undertaken for the purpose of transferring to canvas the most remarkable and interesting aspects of the vegetation of the world. To do this she visited the forests of Brazil and California, the mountains of Peru, New Zealand and Australia, the East and West Indies, China and Japan, northern and southern Africa, the Himalayas and wherever else English enterprise had gained a foothold. Such journeys are in themselves difficult, hazardous and fatiguing, and when they are accompanied by the exposure and strain attendant on the labors of an artist painting from nature, often under the most severe conditions of climate and surroundings, they tax the strength of mind and body to the utmost limits of endurance. Four or five years ago Miss North went to Chili for the express purpose of obtaining pictures of the remarkable forests of Araucaria which are found there only on some of the highest mountains. But her constitution, weakened by long residences in the hottest and most unhealthy parts of the world, gave way under this new effort. A long rest in the healthy climate of the mountains of Jamaica failed to restore her wasted energies, and she was forced to give up a proposed visit to Mexico (almost the only part of the world she had not seen) and return to England, which she was not destined to leave again. The enjoyment of her last years, clouded by long and painful illnesses, was found in gardening, to which she became enthusiastically devoted, and which she carried on with great success. Miss North presented her most important works, illustrating various aspects of vegetation, to the British nation. They represent a series of nearly six hundred pictures, which are preserved in the "North Gallery," which she caused to be erected, at her own expense, within the Royal Gardens at Kew, where it forms one of the most instructive and popular departments of that great establishment. Miss North passed a summer in the eastern states many years ago, residing for a considerable time on the north shore of Massachusetts Bay. The friends whom she made in this country at that time, and those who have been fortunate enough to enjoy the hospitality she dispensed so charmingly in London or at her last home at Alderley, remember her with admiration and affection.

Catalogues Received.

F. E. McAllister, 22 Dey Street, New York; Bulbs and Seeds.—John Gardiner & Co., 21 North Thirteenth Street, Philadelphia, Pa.; Spring-flowering Bulbs and Roots.—T. S. Hubbard & Co., Fredonia, N. Y.; Grape Vines and Small Fruits.—F. Sander & Co., St. Albans, Eng.; Orchids.—Hartman Manufacturing Company, Beaver Falls, Pa.; Wire Specialties.—Wm. Parry, Parry, N. J.; Fruit, Ornamental Trees, etc.—Peter Henderson & Co., 35 Cortlandt Street, New York; Autumn Bulbs, Plants and Seeds.—S. C. De Cou, Moorestown, N. J.; Small Fruits and Plants.—Vilmorin-Andrieux & Co., 4 Quai de la Megisserie, Paris, France; Seeds and Bulbs for Autumn Planting.—John R. & A. Murdoch, 508 Smithfield Street, Pittsburgh, Pa.; Trees, Bulbs and Flowers.—Currie Brothers, Milwaukee, Wis.; Flowering Bulbs, Plants, etc.—August Rölker & Sons, Station E, New York; Select Flower Seeds.—Sidney Tuttle & Co., Bloomington, Ill.; Trees, Plants, Shrubs, Roses, Bulbs, etc.—Ellwanger & Barry, Rochester, N. Y.; Pot-grown and Layer Strawberries, and Novelties and Specialties for Fall Planting.